



## SEQUENCE LISTING

<110> TOOLGEN, Inc.

<120> Regulatory Zinc Finger Proteins

<130> Q88285

<140> US 10/538,041

<141> 2005-06-08

<150> US 60/431,892

<151> 2002-12-09

<160> 129

<170> PatentIn version 3.2

<210> 1

<211> 23

<212> PRT

<213> Homo sapiens

<400> 1

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu  
1 5 10 15

Arg Arg His Cys Gly Arg Thr His  
20

<210> 2

<211> 23

<212> PRT

<213> Homo sapiens

<400> 2

Tyr Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys  
1 5 10 15

Arg Arg His Cys Ile Leu His  
20

<210> 3

<211> 23

<212> PRT

<213> Homo sapiens

<400> 3

Tyr Thr Cys Ser Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu  
1 5 10 15

Asn Arg His Arg Arg Thr His  
20

<210> 4  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 4

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
1 5 10 15

Thr Arg His Gln Lys Ile His  
20

<210> 5  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 5

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His  
20

<210> 6  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 6

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu  
1 5 10 15

Thr Arg His Lys Lys Ser His  
20

<210> 7  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 7

Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu  
1 5 10 15

Thr Val His Gln Lys Ile His  
20

<210> 8  
<211> 23

<212> PRT  
<213> Homo sapiens

<400> 8

Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu  
1 5 10 15  
Ile Arg His Gln Arg Thr His  
20

<210> 9  
<211> 25  
<212> PRT  
<213> Homo sapiens

<400> 9

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp  
1 5 10 15  
Glu Leu Asn Arg His Lys Lys Arg His  
20 25

<210> 10  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 10

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu  
1 5 10 15  
Lys Thr His Thr Arg Thr His  
20

<210> 11  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 11

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15  
Thr Arg His Gln Arg Ile His  
20

<210> 12  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 12

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
1 5 10 15

Ile Arg His Gln Arg Thr His  
20

<210> 13

<211> 23

<212> PRT

<213> Homo sapiens

<400> 13

Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val Ser Ser Asn Leu  
1 5 10 15

Asn Val His Arg Arg Ile His  
20

<210> 14

<211> 23

<212> PRT

<213> Homo sapiens

<400> 14

Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu  
1 5 10 15

Arg Arg His Glu Thr Thr His  
20

<210> 15

<211> 23

<212> PRT

<213> Homo sapiens

<400> 15

Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu  
1 5 10 15

Ile Arg His Gln Arg Ile His  
20

<210> 16

<211> 23

<212> PRT

<213> Homo sapiens

<400> 16

Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu  
1 5 10 15

Thr Arg His Lys Arg Ile His  
20

<210> 17  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 17

Tyr Glu Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu  
1 5 10 15

Asn Val His Lys Arg Thr His  
20

<210> 18  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 18

Phe Leu Cys Gln Tyr Cys Ala Gln Arg Phe Gly Arg Lys Asp His Leu  
1 5 10 15

Thr Arg His Met Lys Lys Ser  
20

<210> 19  
<211> 24  
<212> PRT  
<213> Artificial

<220>  
<223> Artificial zinc finger domain

<400> 19

Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Asp Ser Ser Asn Leu  
1 5 10 15

Gln Arg His Val Arg Asn Ile His  
20

<210> 20  
<211> 83  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein  
  
<400> 20

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
1 5 10 15  
Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg  
50 55 60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr  
65 70 75 80

Gly Glu Lys

<210> 21  
<211> 83  
<212> PRT  
<213> Artificial  
  
<220>  
<223> artificial zinc finger protein  
  
<400> 21

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80

Gly Glu Lys

<210> 22  
<211> 83  
<212> PRT  
<213> Artificial  
  
<220>  
<223> artificial zinc finger protein

<400> 22

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys

<210> 23

<211> 83

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 23

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asp His Cys Gly Lys  
50 55 60

Ala Phe Ser Val Ser Ser Asn Leu Asn Val His Arg Arg Ile His Thr  
65 70 75 80

Gly Glu Lys

<210> 24

<211> 84

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 24

Tyr Glu Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu

1                   5                   10                   15  
Asn Val His Lys Arg Thr His Thr Gly Glu Lys Pro Phe Leu Cys Gln  
20                   25                   30  
Tyr Cys Ala Gln Arg Phe Gly Arg Lys Asp His Leu Thr Arg His Met  
35                   40                   45  
Lys Lys Ser His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln  
50                   55                   60  
Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His  
65                   70                   75                   80  
Thr Gly Glu Lys

<210> 25  
<211> 83  
<212> PRT  
<213> Artificial  
  
<220>  
<223> artificial zinc finger protein  
  
<400> 25  
  
Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1                   5                   10                   15  
  
Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20                   25                   30  
  
Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35                   40                   45  
  
Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50                   55                   60  
Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65                   70                   75                   80  
  
Gly Glu Lys

<210> 26  
<211> 84  
<212> PRT  
<213> Artificial  
  
<220>  
<223> artificial zinc finger protein  
  
<400> 26  
  
Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu  
1                   5                   10                   15

Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Phe Leu Cys Gln Tyr Cys Ala Gln  
50 55 60

Arg Phe Gly Arg Lys Asp His Leu Thr Arg His Met Lys Lys Ser His  
65 70 75 80

Thr Gly Glu Lys

<210> 27  
<211> 83  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 27

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu  
1 5 10 15

Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys

<210> 28  
<211> 85  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 28

Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Asp Ser Ser Asn Leu

1 5 10 15  
Gln Arg His Val Arg Asn Ile His Thr Gly Glu Lys Pro Tyr Arg Cys  
20 25 30  
Glu Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His  
35 40 45  
Lys Arg Ile His Thr Gly Glu Lys Pro Phe Leu Cys Gln Tyr Cys Ala  
50 55 60  
Gln Arg Phe Gly Arg Lys Asp His Leu Thr Arg His Met Lys Lys Ser  
65 70 75 80  
His Thr Gly Glu Lys  
85

<210> 29  
<211> 84  
<212> PRT  
<213> Artificial  
  
<220>  
<223> artificial zinc finger protein  
  
<400> 29

Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Asp Ser Ser Asn Leu  
1 5 10 15

Gln Arg His Val Arg Asn Ile His Thr Gly Glu Lys Pro Tyr Arg Cys  
20 25 30

Glu Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His  
35 40 45

Lys Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly  
50 55 60

Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His  
65 70 75 80

Thr Gly Glu Lys

<210> 30  
<211> 111  
<212> PRT  
<213> Artificial  
  
<220>  
<223> artificial zinc finger protein  
  
<400> 30

Tyr Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys  
1 5 10 15

Arg Arg His Cys Ile Leu His Thr Gly Glu Lys Pro Tyr Ile Cys Arg  
20 25 30

Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val  
85 90 95

Ser Ser Ser Leu Arg Arg His Glu Thr Thr His Thr Gly Glu Lys  
100 105 110

<210> 31

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 31

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Ser Cys Gly  
20 25 30

Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys Arg Arg His Cys  
35 40 45

Ile Leu His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg  
50 55 60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg  
85 90 95

Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 32

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 32

Phe	Gln	Cys	Lys	Thr	Cys	Gln	Arg	Lys	Phe	Ser	Arg	Ser	Asp	His	Leu
1					5				10					15	
Lys	Thr	His	Thr	Arg	Thr	His	Thr	Gly	Glu	Lys	Pro	Tyr	Glu	Cys	Asp
				20				25					30		
His	Cys	Gly	Lys	Ala	Phe	Ser	Val	Ser	Ser	Asn	Leu	Asn	Val	His	Arg
				35			40				45				
Arg	Ile	His	Thr	Gly	Glu	Lys	Pro	Tyr	Lys	Cys	Glu	Glu	Cys	Gly	Lys
				50			55			60					
Ala	Phe	Arg	Gln	Ser	Ser	His	Leu	Thr	Thr	His	Lys	Ile	Ile	His	Thr
				65			70			75			80		
Gly	Glu	Lys	Pro	Tyr	Ser	Cys	Gly	Ile	Cys	Gly	Lys	Ser	Phe	Ser	Asp
				85				90					95		
Ser	Ser	Ala	Lys	Arg	Arg	His	Cys	Ile	Leu	His	Thr	Gly	Glu	Lys	
				100				105				110			

<210> 33

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 33

Tyr	Lys	Cys	Met	Glu	Cys	Gly	Lys	Ala	Phe	Asn	Arg	Arg	Ser	His	Leu
1							5			10				15	
Thr	Arg	His	Gln	Arg	Ile	His	Thr	Gly	Glu	Lys	Pro	Tyr	Thr	Cys	Ser
				20				25					30		
Asp	Cys	Gly	Lys	Ala	Phe	Arg	Asp	Lys	Ser	Cys	Leu	Asn	Arg	His	Arg
				35			40				45				
Arg	Thr	His	Thr	Gly	Glu	Lys	Pro	Tyr	Lys	Cys	Glu	Glu	Cys	Gly	Lys
				50			55			60					
Ala	Phe	Arg	Gln	Ser	Ser	His	Leu	Thr	Thr	His	Lys	Ile	Ile	His	Thr
				65			70			75			80		
Gly	Glu	Lys	Pro	Tyr	Thr	Cys	Ser	Asp	Cys	Gly	Lys	Ala	Phe	Arg	Asp
				85				90				95			
Lys	Ser	Cys	Leu	Asn	Arg	His	Arg	Arg	Thr	His	Thr	Gly	Glu	Lys	
				100				105			110				

```

<210> 34
<211> 111
<212> PRT
<213> Artificial

<220>
<223> artificial zinc finger protein

<400> 34

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu
1           5          10          15

Thr Arg His Lys Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Gly
20          25          30

Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln
35          40          45

Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
50          55          60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr
65          70          75          80

Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg
85          90          95

Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys
100         105         110

<210> 35
<211> 111
<212> PRT
<213> Artificial

<220>
<223> artificial zinc finger protein

<400> 35

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu
1           5          10          15

Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys
20          25          30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr
35          40          45

Arg Thr His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg
50          55          60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr
65          70          75          80

```

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 36  
<211> 113  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 36

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys  
35 40 45

Ile Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe  
85 90 95

Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu  
100 105 110

Lys

<210> 37  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 37

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu  
1 5 10 15

Thr Arg His Lys Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Asp Cys Gly Lys  
50 55 60

Ser Phe Ser Gln Ser Ser Leu Ile Arg His Gln Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 38

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 38

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Ser  
20 25 30

Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu Asn Arg His Arg  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys  
85 90 95

Pro Ser Asn Leu Arg Arg His Gly Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 39

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 39

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe Arg Trp  
85 90 95

Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 40

<211> 113

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 40

Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val Ser Ser Asn Leu  
1 5 10 15

Asn Val His Arg Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys  
50 55 60

Thr Trp Lys Phe Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg  
65 70 75 80

His Thr Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe  
85 90 95

Thr Gln Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr Gly Glu  
100 105 110

Lys

<210> 41

<211> 111

<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 41

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
20 25 30  
Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 42  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 42

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg  
85 90 95

Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys

100 105 110

<210> 43  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 43

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Gly  
20 25 30

Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln  
35 40 45

Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 44  
<211> 113  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 44

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp  
1 5 10 15

Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu Lys Pro Tyr Lys  
20 25 30

Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu Ile Arg  
35 40 45

His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys  
50 55 60

Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile

65                   70                   75                   80  
His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe  
      85                                   90                           95  
Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu  
      100                                  105                           110  
Lys

<210> 45  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein  
  
<400> 45

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1                   5   10                           15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20   25                                   30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35   40                                   45

Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asp His Cys Gly Lys  
50   55                                   60

Ala Phe Ser Val Ser Ser Asn Leu Asn Val His Arg Arg Ile His Thr  
65   70                                   75                           80

Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln  
85   90                                   95

Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr Gly Glu Lys  
100   105                                   110

<210> 46  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein  
  
<400> 46

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1                   5   10                           15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met

20	25	30
Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln		
35	40	45
Arg Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys		
50	55	60
Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr		
65	70	75
Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg		
85	90	95
Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys		
100	105	110

<210> 47  
<211> 113  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 47

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp		
1	5	10
		15

Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu Lys Pro Tyr Lys		
20	25	30

Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg		
35	40	45

His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Ser Asp Cys		
50	55	60

Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu Asn Arg His Arg Arg Thr		
65	70	75
		80

His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe		
85	90	95

Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr Gly Glu		
100	105	110

Lys

<210> 48  
<211> 111  
<212> PRT  
<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 48

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Asn  
20 25 30

Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu Ile Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys  
50 55 60

Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr  
65 70 75 80

Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg  
85 90 95

Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 49

<211> 113

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 49

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Arg  
20 25 30

Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys  
50 55 60

Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe  
85 90 95

Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu  
100 105 110

Lys

```

<210> 50
<211> 113
<212> PRT
<213> Artificial

<220>
<223> artificial zinc finger protein

<400> 50

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu
1           5          10          15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu
20          25          30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys
35          40          45

Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
50          55          60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr
65          70          75          80

Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe
85          90          95

Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu
100         105         110

Lys

```

```

<210> 51
<211> 111
<212> PRT
<213> Artificial

<220>
<223> artificial zinc finger protein

<400> 51

Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu
1           5          10          15

Arg Arg His Glu Thr Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu
20          25          30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys
35          40          45

Arg Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg
50          55          60

```

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val  
85 90 95

Ser Ser Ser Leu Arg Arg His Glu Thr Thr His Thr Gly Glu Lys  
100 105 110

<210> 52  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 52

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Lys  
20 25 30

Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Leu Arg Arg His Glu  
35 40 45

Thr Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys  
50 55 60

Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg  
85 90 95

Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 53  
<211> 113  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 53

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp  
1 5 10 15

Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu Lys Pro Tyr Lys  
20 25 30

Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg  
35 40 45

His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Lys Gln Cys  
50 55 60

Gly Lys Ala Phe Ser Val Ser Ser Leu Arg Arg His Glu Thr Thr  
65 70 75 80

His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe  
85 90 95

Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr Gly Glu  
100 105 110

Lys

<210> 54  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 54

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Gly  
20 25 30

Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln  
35 40 45

Lys Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln  
85 90 95

Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr Gly Glu Lys  
100 105 110

<210> 55  
<211> 111  
<212> PRT  
<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 55

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Arg  
20 25 30

Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Gly Gln Cys Gly Lys  
50 55 60

Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln Lys Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg  
85 90 95

Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 56

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 56

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu  
1 5 10 15

Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Ile Cys Arg  
20 25 30

Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe Arg Trp  
85 90 95

Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 57  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 57

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu  
1 5 10 15

Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
20 25 ; 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys  
50 55 60

Ala Phe Gly Cys Pro Ser Asn Leu Arg Arg His Gly Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg  
85 90 95

Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 58  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 58

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Lys  
20 25 30

Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu Arg Arg His Gly  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys

85

90

95

Pro Ser Asn Leu Arg Arg His Gly Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 59  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 59

Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu  
1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Gly  
20 25 30

Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln  
35 40 45

Lys Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg  
50 55 60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg  
85 90 95

Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 60  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 60

Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu  
1 5 10 15

Ile Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys  
35 40 45

Ile Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys

50	55	60
Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr		
65	70	75
Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg		
85	90	95
Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys		
100	105	110

<210> 61  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 61

Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu			
1	5	10	15

Ile Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Glu			
20	25	30	

Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys			
35	40	45	

Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys			
50	55	60	

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr			
65	70	75	80

Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln			
85	90	95	

Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr Gly Glu Lys			
100	105	110	

<210> 62  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 62

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu			
1	5	10	15

Thr Arg His Lys Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Met			
20	25	30	

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys  
50 55 60

Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val  
85 90 95

Ser Ser Asn Leu Asn Val His Arg Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 63

<211> 113

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 63

Tyr Thr Cys Ser Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu  
1 5 10 15

Asn Arg His Arg Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Tyr Cys Gly Lys  
50 55 60

Thr Phe Ser Val Ser Ser Thr Leu Ile Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe  
85 90 95

Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu  
100 105 110

Lys

<210> 64

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 64

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Ser  
20 25 30

Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu Asn Arg His Arg  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 65

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 65

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys  
50 55 60

Ala Phe Thr Gln Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln  
85 90 95

Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr Gly Glu Lys  
100 105 110

<210> 66  
<211> 113  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 66

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu  
1 5 10 15

Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Thr Cys Lys  
20 25 30

Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Leu Arg Arg His Glu  
35 40 45

Thr Thr His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys  
50 55 60

Thr Trp Lys Phe Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg  
65 70 75 80

His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe  
85 90 95

Ser Gln Ser Ser Ser Leu Ile Arg His Gln Arg Thr His Thr Gly Glu  
100 105 110

Lys

<210> 67  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 67

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro  
20 25 30

Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu Ile Arg His Gln  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys  
50 55 60

Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 68  
<211> 111/  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 68

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Ser Cys Gly  
20 25 30

Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys Arg Arg His Cys  
35 40 45

Ile Leu His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys  
50 55 60

Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln  
85 90 95

Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr Gly Glu Lys  
100 105 110

<210> 69  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 69

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Lys  
20 25 30

Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu Arg Arg His Gly  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys  
50 55 60

Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg  
85 90 95

Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 70  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 70

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys  
35 40 45

Ile Ile His Thr Gly Glu Lys Pro Tyr Ser Cys Gly Ile Cys Gly Lys  
50 55 60

Ser Phe Ser Asp Ser Ser Ala Lys Arg Arg His Cys Ile Leu His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 71  
<211> 113  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 71

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
           20                     25                         30  
  
 Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
           35                     40                         45  
  
 Arg Ile His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys  
           50                     55                         60  
  
 Thr Trp Lys Phe Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg  
           65                     70                     75                 80  
  
 His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe  
           85                     90                         95  
  
 Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu  
           100                    105                     110  
  
 Lys

<210> 72  
 <211> 96  
 <212> PRT  
 <213> Homo sapiens

<400> 72

Asp Ala Lys Ser Leu Thr Ala Trp Ser Arg Thr Leu Val Thr Phe Lys  
   1              5                     10                 15

Asp Val Phe Val Asp Phe Thr Arg Glu Glu Trp Lys Leu Leu Asp Thr  
   20             25                     30

Ala Gln Gln Ile Val Tyr Arg Asn Val Met Leu Glu Asn Tyr Lys Asn  
   35             40                     45

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg  
   50             55                     60

Leu Glu Lys Gly Glu Glu Pro Trp Leu Val Glu Arg Glu Ile His Gln  
   65             70                     75                 80

Glu Thr His Pro Asp Ser Glu Thr Ala Phe Glu Ile Lys Ser Ser Val  
   85                     90                     95

<210> 73  
 <211> 260  
 <212> PRT  
 <213> Homo sapiens

<400> 73

Tyr Leu Pro Asp Thr Asp Asp Arg His Arg Ile Glu Glu Lys Arg Lys  
   1              5                     10                 15

Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met Lys Lys Ser Pro Phe Ser  
                   20                  25                  30  
  
 Gly Pro Thr Asp Pro Arg Pro Pro Pro Arg Arg Ile Ala Val Pro Ser  
                   35                  40                  45  
  
 Arg Ser Ser Ala Ser Val Pro Lys Pro Ala Pro Gln Pro Tyr Pro Phe  
                   50                  55                  60  
  
 Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp Glu Phe Pro Thr Met Val  
                   65                  70                  75                  80  
  
 Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser Ala Leu Ala Pro Ala Pro  
                   85                  90                  95  
  
 Pro Gln Val Leu Pro Gln Ala Pro Ala Pro Ala Pro Ala Met  
                   100                105                110  
  
 Val Ser Ala Leu Ala Gln Ala Pro Ala Pro Val Pro Val Leu Ala Pro  
                   115                120                125  
  
 Gly Pro Pro Gln Ala Val Ala Pro Pro Ala Pro Lys Pro Thr Gln Ala  
                   130                135                140  
  
 Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gln Leu Gln Phe Asp Asp  
                   145                150                155                160  
  
 Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr Asp Pro Ala Val Phe  
                   165                170                175  
  
 Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe Gln Gln Leu Leu Asn  
                   180                185                190  
  
 Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu Pro Met Leu Met Glu  
                   195                200                205  
  
 Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Ala Gln Arg Pro Pro Asp  
                   210                215                220  
  
 Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly Leu Pro Asn Gly Leu Leu  
                   225                230                235                240  
  
 Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala Asp Met Asp Phe Ser Ala  
                   245                250                255  
  
 Leu Leu Ser Gln  
                   260

<210> 74  
 <211> 127  
 <212> PRT  
 <213> *Sacharromyces cerevisiae*

<400> 74

Asn Phe Asn Gln Ser Gly Asn Ile Ala Asp Ser Ser Leu Ser Phe Thr  
                   1                  5                  10                  15

Phe Thr Asn Ser Ser Asn Gly Pro Asn Leu Ile Thr Thr Gln Thr Asn  
   20                   25                   30  
  
 Ser Gln Ala Leu Ser Gln Pro Ile Ala Ser Ser Asn Val His Asp Asn  
   35                   40                   45  
  
 Phe Met Asn Asn Glu Ile Thr Ala Ser Lys Ile Asp Asp Gly Asn Asn  
   50                   55                   60  
  
 Ser Lys Pro Leu Ser Pro Gly Trp Thr Asp Gln Thr Ala Tyr Asn Ala  
   65                   70                   75                   80  
  
 Phe Gly Ile Thr Thr Gly Met Phe Asn Thr Thr Thr Met Asp Asp Val  
   85                   90                   95  
  
 Tyr Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro Lys Lys  
  100                  105                  110  
  
 Glu Ile Ser Met Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
  115                  120                  125

<210> 75  
 <211> 63  
 <212> PRT  
 <213> Homo sapiens

<400> 75  
  
 Val Ser Val Thr Phe Glu Asp Val Ala Val Leu Phe Thr Arg Asp Glu  
  1                5                   10                   15  
  
 Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser Leu Tyr Arg Glu Val Met  
  20                25                   30  
  
 Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met Ala Gly Phe Leu Phe Thr  
  35                40                   45  
  
 Lys Pro Lys Val Ile Ser Leu Leu Gln Gln Gly Glu Asp Pro Trp  
  50                55                   60

<210> 76  
 <211> 12  
 <212> DNA  
 <213> Homo sapiens

<400> 76  
 gtttgggagg tc                           12

<210> 77  
 <211> 12  
 <212> DNA  
 <213> Homo sapiens

<400> 77

tgggaggta	ga	12
<210>	78	
<211>	12	
<212>	DNA	
<213>	Homo sapiens	
<400>	78	
gtcagaaata	gg	12
<210>	79	
<211>	12	
<212>	DNA	
<213>	Homo sapiens	
<400>	79	
gccagagccg	gg	12
<210>	80	
<211>	12	
<212>	DNA	
<213>	Homo sapiens	
<400>	80	
gagcgaaaaa	aa	12
<210>	81	
<211>	12	
<212>	DNA	
<213>	Homo sapiens	
<400>	81	
ggggagaggg	ac	12
<210>	82	
<211>	12	
<212>	DNA	
<213>	Homo sapiens	
<400>	82	
gtggggagag	gg	12
<210>	83	
<211>	12	
<212>	DNA	
<213>	Homo sapiens	
<400>	83	
ggggcagggg	aa	12
<210>	84	

<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 84  
gacagggcct ga 12

<210> 85  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 85  
ggtgtggggtc ga 12

<210> 86  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 86  
caagtgggga at 12

<210> 87  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 87  
gggtgggggg ag 12

<210> 88  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 88  
agggggtggg gg 12

<210> 89  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 89  
gggtggggag ag 12

<210> 90  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 90

gagcgagcag cg	12
<210> 91	
<211> 12	
<212> DNA	
<213> Homo sapiens	
<400> 91	
agaaaataggg gg	12
<210> 92	
<211> 12	
<212> DNA	
<213> Homo sapiens	
<400> 92	
gggggtgggg gg	12
<210> 93	
<211> 12	
<212> DNA	
<213> Homo sapiens	
<400> 93	
agagccgggg tg	12
<210> 94	
<211> 12	
<212> DNA	
<213> Homo sapiens	
<400> 94	
aggaaagctg gg	12
<210> 95	
<211> 12	
<212> DNA	
<213> Homo sapiens	
<400> 95	
gtgggtgagt ga	12
<210> 96	
<211> 12	
<212> DNA	
<213> Homo sapiens	
<400> 96	
gtgtgggtt ga	12
<210> 97	
<211> 12	

<212> DNA		
<213> Homo sapiens		
<400> 97		
gttgagggtg tt		12
<210> 98		
<211> 12		
<212> DNA		
<213> Homo sapiens		
<400> 98		
gaggggtgttg ga		12
<210> 99		
<211> 12		
<212> DNA		
<213> Homo sapiens		
<400> 99		
ggtgttggag cg		12
<210> 100		
<211> 12		
<212> DNA		
<213> Homo sapiens		
<400> 100		
ggggagaggg ac		12
<210> 101		
<211> 12		
<212> DNA		
<213> Homo sapiens		
<400> 101		
tggggagagg ga		12
<210> 102		
<211> 12		
<212> DNA		
<213> Homo sapiens		
<400> 102		
ggtggggaga gg		12
<210> 103		
<211> 12		
<212> DNA		
<213> Homo sapiens		
<400> 103		
agggacgggt gg		12

<210> 104  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 104  
gacagggacg gg 12

<210> 105  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 105  
gaggagggag ca 12

<210> 106  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 106  
gggggtcgag ct 12

<210> 107  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 107  
gaaggggaag ct 12

<210> 108  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 108  
aatgaagggg aa 12

<210> 109  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 109  
gcggctcggg cc 12

<210> 110  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 110  
gggcgggccg gg 12

<210> 111  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 111  
aaaaaaaggggg gg 12

<210> 112  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 112  
gcagcggtta gg 12

<210> 113  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 113  
ggggaagtag ag 12

<210> 114  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 114  
agagaagtgcg ag 12

<210> 115  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 115  
gagagagacg gg 12

<210> 116  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 116  
ggggtcagag ag 12

```

<210> 117
<211> 12
<212> DNA
<213> Homo sapiens

<400> 117
gggggtggggg ga 12

<210> 118
<211> 12
<212> DNA
<213> Homo sapiens

<400> 118
caagggggag gg 12

<210> 119
<211> 90
<212> PRT
<213> Saccharomyces cerevisiae

<400> 119

Asn Ser Ala Ser Ser Ser Thr Lys Leu Asp Asp Asp Leu Gly Thr Ala
1 5 10 15

Ala Ala Val Leu Ser Asn Met Arg Ser Ser Pro Tyr Arg Thr His Asp
20 25 30

Lys Pro Ile Ser Asn Val Asn Asp Met Asn Asn Thr Asn Ala Leu Gly
35 40 45

Val Pro Ala Ser Arg Pro His Ser Ser Ser Phe Pro Ser Lys Gly Val
50 55 60

Leu Arg Pro Ile Leu Leu Arg Ile His Asn Ser Glu Gln Gln Pro Ile
65 70 75 80

Phe Glu Ser Asn Asn Ser Thr Ala Cys Ile
85 90

<210> 120
<211> 3480
<212> DNA
<213> Homo sapiens

<220>
<221> misc_RNA
<222> (2363)..(2363)
<223> mRNA start site

<220>
<221> misc_signal
<222> (3401)..(3403)
<223> translation start site

```

<400>	120
gaattctgtg ccctcaactcc cctggatccc tgggcaaagc cccagaggga aacacaaaca	60
ggttgttcta acacacccctt ctgggtacca ccatggagga cagttggctt atgggggtgg	120
gggggtgcctg gggccacgga gtgactggtg atggctatcc ctccttgaa cccctccagc	180
ctcccttttag cttagatgtt gtttactaa gacctgtctt ttcaggtctg	240
ttggctctt tagggctga agaaggccga gttgagaagg gatgcaaggg agggggccag	300
aatgagccct tagggctcag agcctccatc ctgccccaaag atgtctacag cttgtgctcc	360
tgggtgcta gaggcgacaa aggaggaaag ttagtggctt cccttcata tcccgttcat	420
cagcctagag catggagccc aggtgaggag gcctgcctgg gagggggccc tgagccagga	480
aataaacatt tactaactgt acaaagaccc tgcctctgt gctggggagc ctgccaagtg	540
gtggagacag gactagtgcg cgaatgtgg aaagggaggg ttgggggtggg tgggagccag	600
ccctttcct cataagggcc ttaggacacc ataccgtgg aactgggggt actggggagg	660
taacctagca cctccaccaa accacagcaa catgtgctga ggatgggct gactaggtaa	720
gctccctgga gcgttttgtt taaattgagg gaaattgctg cattcccatt ctcagtcatt	780
gcctccacag aggctatgcc agctgttaggc cagaccctgg caagatctgg gtggataatc	840
agactgactg gcctcagagc cccaaacttttgc ttccctgggg cagcctggaa atagccaggt	900
cagaaaccag ccaggaattt ttccaaagctg cttccatat gcaagaatgg gatgggggcc	960
tttgggagca ctttaggaaag atgtggagag ttggaggaaa agggggcttg gaggttaggg	1020
aggggactgg gggaggata ggggagaagc tgtgagcctg gagaagtagc caagggatcc	1080
tgagggaatg ggggagctga gacgaaaccc ccatttctat tcagaagatg agctatgagt	1140
ctgggcttgg gctgatagaa gccttggccc ctggccttgtt gggagctctg ggcagctggc	1200
ctacagacgt tccttagtgc tggcgggttag gtttgaatca tcacgcaggg cctggcctcc	1260
acccggccccc accagccccc tggcctcagt tccctggcaa catctgggtt tggggggca	1320
gcaggaacaa gggcctctgt ctgcccagct gcctccccc ttgggttttg ccagactcca	1380
cagtgcatac gtgggctcca acaggtcctc ttccctccca gtcactgact aacccggaa	1440
ccacacagct tccctttctc agctccacaa acttggtgcc aaattcttct cccctggaa	1500
gcatccctgg acacttccca aaggacccca gtcactccag cctgttgctt gccgctcact	1560
ttgatgtctg caggccagat gagggctcca gatggcacat tgtcagaggg acacactgtg	1620
gccctgtgc ccagccctgg gctctctgtt catgaagcaa ctccagtcacaa aaatatgttag	1680
ctgtttggaa ggtcagaaat agggggtcca ggagccaaact ccccccaccc cctttccaaa	1740

gcccattccc	tcttagcca	gagccggggt	gtgcagacgg	cagtcaactag	ggggcgctcg	1800
gccaccacag	ggaagctggg	tgaatggagc	gagcagcgtc	ttcgagagtg	aggacgtgtg	1860
tgtctgtgtg	ggtgagtgag	tgtgtgcgtg	tggggttgag	ggtgttggag	cggggagaag	1920
gccaggggtc	actccaggat	tccaacagat	ctgtgtgtcc	ctctccccac	ccgtccctgt	1980
ccggctctcc	gccttcctt	gccttcctca	atattcctag	caaagagggaa	acggctctca	2040
ggccctgtcc	gcacgtaacc	tcactttcct	gctccctcct	cgccaatgcc	ccgcgggcgc	2100
gtgtctctgg	acagagttc	cgggggcgga	tggtaattt	tcaggctgtg	aaccttggtg	2160
ggggtcgagc	ttccccttca	ttgcggcggg	ctgcggccca	ggcttcactg	ggcgtccgca	2220
gagcccgggc	ccgagccgcg	tgtggagggg	ctgaggctcg	cctgtccccg	ccccccgggg	2280
cggggcgggg	gcggggtccc	ggcggggcgg	agccatgcgc	cccccccttt	tttttttaaa	2340
agtccgctgg	tagcgggag	gatcgcggag	gcttgggca	gccgggttagc	tcggaggtcg	2400
 tggcgctggg	ggctagcacc	agcgctctgt	cgggaggcgc	agcggttagg	tggaccggc	2460
agcggactca	ccggccaggg	cgctcggtgc	tggaaattga	tattcattga	tccgggtttt	2520
atccctcttc	tttttctta	aacattttt	tttaaaactg	tattgtttct	cgtttaatt	2580
tattttgct	tgccattccc	cacttgaatc	ggccgacgg	cttggggaga	ttgctctact	2640
tccccaaatc	actgtggatt	ttggaaacca	gcagaaagag	gaaagaggta	gcaagagctc	2700
cagagagaag	tcgaggaaga	gagagacggg	gtcagagaga	gcgcgcgggc	gtgcgagcag	2760
cgaaaagcgcac	aggggcaaag	tgagtgacct	gctttgggg	gtgaccgccc	gagcgcggcgc	2820
tgagccctcc	cccttgggat	cccgcagctg	accagtcgcg	ctgacggaca	gacagacaga	2880
caccggccccc	agccccagct	accacccct	ccccggccgg	cggcggacag	tggacgcggc	2940
ggcgagccgc	ggcaggggc	cggagccgc	ccccggaggc	gggggtggagg	gggtcggggc	3000
tcgcggcgtc	gcactgaaac	tttcgtcca	acttctggc	tgttctcgct	tcggaggagc	3060
cgtggtccgc	gcgggggaag	ccgagccgag	cggagccgcg	agaagtgcta	gctcgggccc	3120
ggaggagccg	cagccggagg	agggggagga	ggaagaagag	aaggaagagg	agagggggcc	3180
gcagtggcga	ctcggcgctc	ggaagccggg	ctcatggacg	ggtgaggcgg	cggtgtgcgc	3240
agacagtgtct	ccagccgcgc	gcgcctcccc	ggccctggcc	cgggcctcgg	gccggggagg	3300
aagagtagct	cgcgcaggcg	ccgaggagag	cggggccccc	cacagcccgaa	gccggagagg	3360
gagcgcgcagc	cgcgcggcc	ccggtcgggc	ctccgaaacc	atgaacttcc	tgctgtcttg	3420
ggtgcattgg	agccttgcct	tgctgctcta	cctccaccat	gccaaaggtaa	gcggcggtcg	3480

<210> 121  
 <211> 8024  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (3731)..(3731)  
 <223> mRNA start site

<220>  
 <221> misc\_feature  
 <222> (3959)..(3961)  
 <223> ATG

<400> 121

ccgggctgag	ctcagtcatt	ttgccctgag	gactataagt	ggactattat	gcagcacttt	60
cttttttatt	attattacta	ttaagccaag	taagttctta	acagctaaca	cctgagctgg	120
tggctctgag	aaggcctcttc	actccttcac	gggagacggg	accattcaca	tgaagatcct	180
acattgttgt	ttttttttt	ttggaggtcg	aaaaaggtca	ctgttaggag	gctttctggg	240
ccttgctcc	tctccctcaa	tttattaccc	ctccagtgcc	tgatgacgta	cagggagact	300
tccacccgat	aatgacatgg	ctttgttat	ttcacaaatt	cccagcattt	actgttaatc	360
agaccttgcgtt	tgaaccaccc	ccaaggggct	tgcagtctaa	acagctca	ttgctcagcc	420
tcttcctgag	gtcaggcact	gtcttgctaa	ggccgacatc	agctcatgcc	cattttacag	480
atggggaaac	tgagaatgct	aagaagtgaa	atagcgtaag	gttatacaac	taacagggag	540
acagcctaaa	cttgaaccca	accggaagcc	caacatggcc	ccaagccttc	ctcgaaccccc	600
aggacttggc	aaagcgggcg	tcctgggta	aagcatggca	gaagggcttt	gggtccaagc	660
taagtgaggg	tcctgtttct	agatcacctg	gccaggtgca	gtggctcatg	cctgtaatcc	720
cagcactttg	ggaggctgag	gcgggaggat	tgcttgagct	caaaagtttgc	agtccagccc	780
gggcaataca	gcgagaccc	gtctctacta	aaaaagaaaa	caaaaaatta	gctgagtgtg	840
tagtcccagc	tactcaggag	actgaggctg	gaggattgct	taagcctgga	agttttagggc	900
tgttagagcta	tgatagagcc	actgcacttt	agcctggca	atggagcaag	atactatctc	960
aaaaaaaaaaa	aaatatataat	ataggtcccc	ttgtccctct	gctgagaagt	aaccagatct	1020
ggaaaaagatt	tagtcacctt	ggtccaacta	tttcttcac	ataaaagaaaa	aaaaaggcaa	1080
tgcagacctt	cccatgggg	cagctctgcc	tgaggcctt	gcaggtacct	ctgtttgtct	1140
gccccggggc	acagtggcag	attgggcagg	gcagcttgca	gtgaggattg	ctgatggatg	1200
agctcctagt	gtacctagcc	agccatttac	tcacaaacag	ctattgagca	cctactatgt	1260

gcccagcact ggaggtacaa ctggcaacaa cacaatccg ggcttgcctc atggaggtga	1320
caatctaaat gcggtgagg gtcagctaac aagtgcagaa gttctctta agagctcaa	1380
gaagctccaa ccagaaggac tggcgagggg atccagaagg catccccag tggctactcc	1440
aatggagtgg cttctccatt caggcaaacc tgaatggat aagtcatgg caggaagatc	1500
tggggccggg ggtcatccag tggaagggg agagatgacg cggtcagcat ggcgggaaca	1560
caggagcaga aaggaagcag gtggaaagcc aggtcaaggg ccagggcac ggaaagggg	1620
cagatgcaga taagttagtg ctccctggtg catccttcat ccgcaattca tccttacctg	1680
tgctttgtt gcctccattt cacagctgag gaggccaggg cctgcggagg ttgagagtgt	1740
gctcagggag ccccgagc aaagtggaaag ccagattcca gatcagttct gctggaaatt	1800
cccaagctccc aaaagccctg ctggctgtca gtccccagtc accacaagca cctatcctgt	1860
gtgggtggc ctgcagttct gggagatata tcagctgcct gcagcgtcct ttgctgaact	1920
cacagcaaat aggagagaca gggaggggtc cttggaaagc cctaaattga gttgctgtg	1980
ggagtcctgg gaagaaagga gcctcatcct atcaaaagcc gggggaaaga catcagagtc	2040
cctctgctca ggtcagctgg cacaggtggg tctccaggcc tgggtctcac ttccccagag	2100
ggtgttgc ggtggcccca ggctgaggga ggaaagccca cttccatgt catttgcaa	2160
atggggagtc agggacccatg agatggaaag acaacacagc aagtgaggga tgggttctag	2220
gtccctgca ccctgcaccc tgcacccctgg ccaacgatgt ctatttggca ccagatctgc	2280
aggctcatct gggggacccc aggacccaga ggcagccggg ttgcacatcg aagctgtgag	2340
ctgcagccca ggaaggtcca ggtctgggtg ggcgtccca agcaggctgc aggcccaagg	2400
aggaacaaag atcctctcaa ggggtgcggg gctgagggtc cggcctgcc aaagccactt	2460
gatgacccccc aagtgcaccc cttctgcac ctcagagaag agccctcaag cctccaggt	2520
ccccctccagg ggcacgaata agccccagca gggttctgaa ggggtcccag gaatctccct	2580
gtggggatgc ggtggagggtg gaggaggctg cggcgcctg gggacatctc tggcacagg	2640
tgctgggtgt atgagagatg ggttaggcac caagccccct gcagctgtgg ctggcgggc	2700
ctgcaggaag ggccaggcag gtcctcagg gaccacaaag aacaggggtt ttcacaccta	2760
ggtggccctg catctagcta ggcagtcac catcaggcca taatggcac agtggaggt	2820
agaaccatga gtgagagagg ggaggcttcc agaggcctgg cctgggtccc tgctagattg	2880
aggcctctgg ctatggtaca tggatatttc tgctgtggaa tcaaaggagc aggggatgct	2940
gaatatcccc tctggcccta tgcctgcta cctgtcctt cacggaaggg tgtgtgtgt	3000

gggggtgcag gaccaggcct ccctgggtgc atctctgcca cttgccctt tggctcaggt	3060
ggacccac caggtattca gaactccagc ccagaaacgc gccaagcctg tggggccaag	3120
acctaggggg tgggggtggc ctccctccc cctgtagcca aagggtcctc cttgcccag	3180
ccaggccccg gtgtcgctta ctgctcttat ccaccctcc ttcccaggcc ggtcctcaag	3240
gccccagcaa aggaaccaag ttcccgtgag cctccgaaag gcgaaggca ggcagcagcc	3300
gctggcttct gcgcacta ggagcttcgg atgcccagt tagggctgct ccaaggcggc	3360
cggagcagag agggagacgg ggacggggac aggcaaggac aaagtgcag aggcaaaact	3420
ggctgaaaag cagaagtgtt ggagccgcca agggggggca cgaacaggctc cgtggccgg	3480
gcggagccaa gggtgggggc cgggtccct ccaggtggca ctcggcgcgc tagtccccag	3540
cctcctccct tccccggcc ctgattggca ggcggcctgc gaccagccgc gaacgccaca	3600
 gcgcgggggg cgcccaggag aacgcgaacg gccccccgcg ggagcgggac agtaggaggg	3660
ggcgccgggc tatatatata gcggtcgcc ctggggggg cctggcgctc agggaggcgc	3720
gcactgctcc tcagagtccc agtccagcc gcgcgtttc cgcccggtc gccgctccat	3780
gcagccgggg tagagccgg cgcccggggg ccccggtcgct tgccctccgc acctcctcg	3840
ttgcgcactc cgcgggagg tcggccgtgc gtcggcggt gcccacag ggcagctct	3900
gccccccgc ttcccgccgc cactgaccgc ctgaccgacg cacggccctc gggccggat	3960
gtcgccggcc gggacggccg cggtagcgct gtcggcggt gtcctgctgg cttgctggc	4020
gcctggcg ggccgagggg gcccgcgc acccaactgca cccaacggca cgctggaggc	4080
cggactggag cgcgcgtgg agagcctggt ggcgctctcg ttggcgcc tgccgggtgg	4140
agcgccagccc aaggaggcgg cgtccagag cggcgccggc gactacctgc tgggcatcaa	4200
gcggctgcgg cggctctact gcaacgtggg catcggttcc cacctccagg cgctccccga	4260
cggccgcata ggcggcgccgc acgcggacac cgcgcacagt gagtggcgcc gccaggcg	4320
aaggggcggg ggcggggggc aacggccgccc gggccaaccc gtcagtcac actctgagac	4380
cctcgccggg cacctgctcg gggcccccgg gaaccggggc ggactcgccg tccggccct	4440
tctgacgcgg ggctggggac gcagacactc ttggctccgg cagccagcg caaccctga	4500
ggtcggcgcc cgcctccgc cttcagaaac tcgggtcccg agcgccaat tccagcgcc	4560
tgcggcggtt gcacaggcg cgcgggtcag ccacaggggg cccgagacac ggcggccggc	4620
ctggcccgagg ctggggacc gctgggtcg ggctcgccgc tgaaggtccg ggactgggtg	4680
cggccgcgg gggtcccta cacaggcaag ctaatctgag ctagcgcagg cttggctcc	4740

ggaggcccta	gagggcagct	tgggctctgg	aggcccttgg	gggcggctgc	gccgggaacc	4800
ctggccctt	atccccaaacc	ccaccccaga	aatagggtcc	ccggaggcga	acaagccgag	4860
gggcggagtg	ggccagggat	cacctgcccc	gcaatgacct	gcgcggccgc	cccaggcctg	4920
ctggagctct	cgcccgtgga	gcggggcgtg	gtgagcatct	tcggcgtggc	cagccggttc	4980
ttcgtggcca	tgagcagcaa	gggcaagctc	tatggctcg	tgagtaccgc	aggggtctgg	5040
ctaggcacct	agttgggaac	agcggacatg	gctagcaggc	tcgtggcttc	tccagcccc	5100
cctgtgcctg	ggtcttggag	gggtggcagg	gtcaccaggt	cacgggaccg	gcaggcctcc	5160
ccagacaaag	gaagcagccc	caaggcagga	acaatgaggt	tcctgccatc	cctgagtggg	5220
ccccctccag	accgaggaaa	gggcgtatt	gagagccctt	cccttctcta	gtccagaggg	5280
gtaggtctca	gtgttggAAC	tgcgggcttg	aggctggaca	cgcaggaaat	gaattctctg	5340
gctgctaggt	gcagggcagg	tggtgagagc	accagctgtt	gtgggctggc	catgtcccc	5400
tctcaccctg	tgtgggtctt	gacacctaa	ctgctcagca	gagacatctc	agcccagggt	5460
gggggggtggg	acagaagggg	gttctgaccc	ctggcttcag	gctgggtacc	ttgcccaga	5520
ggtgccccag	ccctgacact	gccctgctt	gctgcagccc	ttcttcacccg	atgagtgcac	5580
gttcaaggag	attctccctc	ccaacaacta	caacgcctac	gagtcctaca	agtaccccgg	5640
catgttcatc	gccctgagca	agaatggaa	gaccaagaag	gggaaccgag	tgtcgcccac	5700
catgaaggtc	acccacttcc	tccccaggct	gtgaccctcc	agaggaccct	tgcctcagcc	5760
tcgggaagcc	cctgggaggg	cagtgccgag	ggtcacctt	gtgcacttcc	ttcggatgaa	5820
gagttaatg	caagagtagg	tgtaaagatat	ttaaattaat	tatttaaatg	tgtatataatt	5880
gccaccaaat	tatttatagt	tctgcgggt	tgtttttaa	ttttctgggg	ggaaaaaaaaag	5940
acaaaaacaaa	aaaccaactc	tgactttct	ggtgcaacag	tggagaatct	taccattgga	6000
tttcttaac	ttgtcaaaag	ttgtcacgag	tgtgctgcta	ttctgtgttt	aaaaaaaaagg	6060
tgacattgga	ttccgatgtc	atccccgtta	gtatggcgtg	gagcatctct	gtctggaaag	6120
gccccctga	ggcttggca	gccagttcag	ggagctccca	ggcttggctc	tcggctagca	6180
tcctcagagg	cccactccct	ttgtgccctg	ttgctattaa	tcgggacata	tcggtttact	6240
tcgggtacag	aaagtgcggt	gttgaagtcc	tcgctgccac	tctgtttta	gatctgccaa	6300
gactgacctt	tgaactttcc	tgttagtcaat	cttcctcgat	ctaccagatg	ggagagaccc	6360
ttggacaact	ttataaaactc	ctgtttgcct	ttttggatc	agcgacagcc	cccatcgctg	6420
tgactattgg	ggaaaagacg	aagcttttc	ataaaattcca	tggagaggaa	tcaatatccc	6480
actggaaggc	tagaaatgga	caagatagt	tatggcaat	cacaacaaa	accctagtg	6540

tgaaaaataa	tttgtatgg	cagatgcttc	tgatggtgtg	atagaatatg	ttttgaaaa	6600
caaaccatcg	aaccccccgc	cccaccccca	aaacgggctt	ccctgtgtt	aggagctt	6660
gggctagaac	tagctacgt	tttaggtga	aatgccttg	taattgtaca	aagcacttgg	6720
tgcagtgtt	gcgtggagca	gcctgctgct	ttctgatgca	ttccctgtt	aagtgcgtt	6780
aacatctacc	tcacaagccc	tgaaacccca	ggcaaaaccc	acagaaagct	cataccgg	6840
gcaggagttt	gccatccaa	gtggctttt	ttccatatgt	agccaaaaag	gattgcagat	6900
agcgtcggtg	cgtccccattc	gaaccttgc	acgtttgagc	tatcttacc	ctgtgattt	6960
cttttagtaa	gggtgatcat	ggtgaaaata	tttcagaca	gctgttacag	tacactata	7020
ggtcaccaag	taaccttata	ttttcttta	tatatttac	aatgttaacc	cctgtcattt	7080
aagcaacgt	ggaagaggca	gggtcggtga	tgtttaaaaa	aagttccgag	gtgatggcaa	7140
acatctaatt	ttaatgaatg	actttttaga	gtttatacaa	aatgaccta	gcttgctacc	7200
agaaatgctc	cgaatgttcc	gtcaagactt	taatactctc	ctaggatgtt	tctgaactgt	7260
ctcccaatt	aacttatgg	gagtctacag	acagcaagac	tggaaaatct	gattggagtt	7320
tttgtcttc	acattccctt	tgaaaactct	ttgttcaat	gcaaatcatc	gactaaaaat	7380
actattctta	accaaggcct	ggaagaaaga	agacacttgc	aaagccgcta	agacaggacc	7440
acacatctta	aactgctgtt	cctaccatgc	actaaactgt	tttaagttt	taaaccacac	7500
cctaggctcc	aggagtgttc	aggaaagatg	gtgtttag	gtctccatgc	tgttggcgt	7560
tgggggtgt	ggagggatca	tccgtcgact	ttctgaattt	taatgtattc	acttagtaac	7620
aaaccatgt	tgtcttaaat	gccttaaattt	attatgagat	ttctgtctc	agagccaaat	7680
cagattgtca	ggaattaaca	tgtgttaggt	ttgatcaccc	ttgaccactt	cttataagata	7740
tttcttcaac	aaatcatgtg	tgtgcctgt	aggaacacaa	ctgtacctt	aaaatattgt	7800
tttcatattg	ctgtgatggg	gattcgaggt	tcctgtatgt	gccactgtt	tcagaatctg	7860
tagtttata	caggtgccga	ccctcggtgt	gatgtatgt	ctgtgcacat	tgacatgctg	7920
accgacaatg	ataagcgttt	atcggttata	aaaagacacc	actggactgg	atgtacacaa	7980
ctggaaagg	aattaaaagc	tattaaaatt	gtgccttgaa	atgc		8024

<210> 122  
 <211> 7000  
 <212> DNA  
 <213> Homo sapiens

<220>

```

<221> misc_feature
<222> (4389)..(4389)
<223> mRNA start site

<220>
<221> misc_feature
<222> (4454)..(4456)
<223> ATG

<400> 122
aatggtaatg taggtttac tagtattaa gtatttacat aaattgcagt      60
acttaaagta atctcttac aagttatTTT atcaaaaact tttcagacac aatTTTTgg      120
ggatttattc aaactgttta acacttaaga agtactggct taccttgag atactgctcg      180
tttggTTTca gaccactgtg atcaagcaa aatcgcaata aagcaagtta catgaatttt      240

ttttcgttt cccagtgcata ataaaagtta cacagcagac tattaagtgt gcaacagcat      300
tatgtttaaa aatgtccata ccttaactta aaaatacttt attgttaaaa aatgctaacg      360
atcatataag ctttcagcga gtgataatct tttgctgat ggagggtctt gcttgatgtt      420
cagagccttgcgtggcttt ggcttaaggc ttaaggaaat attgcagctg gtttgatctt      480
ctatcttagac tgctcaaatt ttctgcatac cagcaataag gctgctctgc tctcttatca      540
tttggTTTca cactggagta gcacttctaa ctgcTTCAA gaactttctt tttgcatttt      600
caactcggat aactggtgca agaggactgg ctTTTGACCT aactcatctt tgggcattGCC      660
tttccccaaa agcttaattt atttcttagct ttgatttca aggaagagac gcgcaactct      720
tcctttcact tgagtactta gaggtcatttgc caggcttac aattggccta atttcaataa      780
tgttgtgttt taggaaatag agaaggctga ggggagggag agagacgggt gaacagctcg      840
tcagtggttggagt agtcagaata cacacatgaa tggatTTTtttgcgtggat      900
cccaaaacaa ttatggcagt aacatcaaag atcaactgatc acagatcatc atgtaaaata      960
ataaggaaat atttggaaata ttgcaagaat tacaaaatg tgacacggag acacaaagtg      1020
agcacatgct gtggggaaaaa cggcaccaac agacttgctc aattcgagga caccacaaaa      1080
cttaattttgt aaaaacacat tatctgtgaa gtacaataaa gtgaaggcataaaaaatgt      1140
gtatgcctat gtaaggcaat cagtagatga tggggaaaaa acattgcatttgcgtggat      1200
aacaaagaga atatgttac aaaaatgacta aactaatagc ataattagaa ttTCATTGAA      1260
gtatTTCTTttt atagtttga gagatttaaa attatgtatt attttataaa ttattatggaa      1320
ggatctccta tataaccagt ctcagactta ttggTTGAT tataactctgg aacatgtgat      1380
tcttctcctc gtgggggttaa aaaaatttat accatcctat ggggtatgac taatctgaat      1440

```

ctcacacttg aatattactt tggatctta ggcaagttat ttaagaataa aaataactta	1500
ctatgttcc tcaactataa aatgagaatt ttaataatct taaacttact gtaaggatga	1560
aataatttc aatagtatgt aatatgatgc ttagcataca ttaagatctc agtgtatatt	1620
agcaacaatt tcagtaaaga aagaccaaatt aattttgtc aagaaatatg aatatataaa	1680
ttatatagg tttaaagggtt attaccata ttatgtga cagtaaaaaa agtcacgaaa	1740
atgtgtgacc taataagttt attcagttt ctaatgtcct gaaccctta tctcagatgg	1800
atttgctcc aaacttataa caataattt caaccctgac tctagtttt tttctgaga	1860
aaaaaaaata aatagaaaca ctgttcttt tcttcctta cctacaggaa tttacttaca	1920
aaaaaatcta acttcttta aaaacagcct taatccctt tgcccagaa ggaaaacttt	1980
tccattgttc tctgaagggt tgctaaaaaa aaaattactg tcaagaggca gatcaataga	2040
agaaaaaggca tacacattt ttgtatcata atttacaca acccgagagc ctttagaaca	2100
aagacccaaa gttacaaaag aaattgtcca ttttatgct taggtcaac aaagtgtggg	2160
caggtgtgga gaaatacaac tggacaaaag gaatatgatc tcattgtaac agactgagt	2220
gggacgcctg gcaagggtgag attcttcctg gtatctctgt gcagtaactca ttccctctgg	2280
gtatggggca ggaccttctt tggatgggg tctttaggc tacatcaaa caaggttaggt	2340
cagataatgt ctatggcc agattcaca cagaaagttt aggtgttaga gtgatatgct	2400
tagtttat ggctggttt gaaaaagggtt ctctggggc taggagccac cttggaaag	2460
agggattcta gtttctatgc ctcgccttgg gggagaatga agggccggag actggagagc	2520
aggagaaggt cagagagagc tgattctgag gtcttcattt ggggtatcat tttctgagc	2580
ccctacaccc taataaagca caagagatgc agtggagcaa ttcagggtca cggtcaggct	2640
atgcattgaa ctgagatttc caaaaagtc tactgaacag taaaaagaaa gtaaaatgga	2700
tcctggggac accagacaga ggctgacaaa tgatttaa gtaaggagaa aatgataaaa	2760
gagaaggatt agcaatagaa acgggtcata taaaatagat ccctcaaaag gaattctctt	2820
aatcccttagc ttctctagat atcccacaac ctcagggact tatcaggcag gttgttttc	2880
cctgaaagtg gggtaaggg agctggagga caaatgaagg tggtatgtgg agggaaaggct	2940
gttctgtgga tgatTTTaaat tcagccccac aatcacttct gtacagctac ccaccgctct	3000
agtcatcccc acatTTGGCC tgctttcttt tcctctgtgg acaggggcac tggatctctac	3060
taatatccat ctcagagaga tacagggggca agtacccctc agcatccatt agaaataaaag	3120
caggctttg cttaaagtta ccagagcatc cacctctgg tgcaaagaca aattctctga	3180
atcaagttag gggctgggc aatgatctca caaggatttg ataccttagga gtccccccat	3240

gcccatacaa	gctcctcatc	tttccactta	cacttggga	agctggctgt	cgtgtacagg	3300
cagatgaagc	tggaaaagag	aggcatattc	agtactcacg	aattcaaaca	gcttgaggga	3360
tttccggta	aagtcaagtcc	taaccagtgt	atacgtacat	acacaccaac	atgtgtgaat	3420
gtgttgtgtg	cacgtgtgtg	cctgtacaag	tccacatggc	atatttacct	gtcagggaca	3480
ggctatggac	aatgactgtt	tcttggactt	tctctaaaaa	agtcagatca	gacaagttt	3540
ttttgtatac	tttgggtaaa	tgtgtggtat	ttcgtgagtt	tggcagttt	tgaaaaaaaaaa	3600
aaaaaaaaaa	aaaaaaaaaa	aaagctgcct	gctctgagcc	catggggcag	ggccaatttt	3660
ttcatctgac	aatctgcgtg	ctttgtttt	gcttgcttat	tttggccccca	caataaccaca	3720
cccttttctt	aactaacctc	tttctacctg	ggctggacgt	gcctgggctc	tcctccctgg	3780
ccccgctccc	acctctccca	ggtctctaaa	cccctagaga	acctgtgtca	gtgtttgaa	3840
tccctcagtt	gctctagcag	gaaaactaga	cagatttagga	gctggggcac	atttggctga	3900
aagacagctc	ttcgctttct	tcttatgctg	cttccccttc	ctctttccc	aaatagatat	3960
ataaaacacat	gtattttcct	gtttaaattt	agcgaattgg	tcccctgcct	gtgccttgat	4020
ttagccattt	ggctcagcct	tgctcctccca	ttccttactc	ggataggagc	cactgggatc	4080
tggagctcca	gcttccaaat	tgaagctggc	ctcaggccag	gtgacctttt	ctttgttaagt	4140
ttcttccta	agcgtgggt	tggggggagg	cgggaatgg	gggggggttgc	aggatctgt	4200
ttgggtctgt	tgaagggggg	gcgagtgagg	aaaggagggg	gctggaagag	agtaaaggc	4260
tgttgttaaa	cagttctta	ccgtaagagg	gagttcagac	ctagatctt	ccagttaaatc	4320
acacaacaaa	cttagctcat	cgcaataaaa	agcagctcag	agccgactgg	ctcttttagg	4380
cactgactcc	gaacaggatt	cttcaccca	ggcatctcct	ccagaggat	ccgccagccc	4440
gtccagcagc	accatgtggg	tgaccaaact	cctgccagcc	ctgctgctgc	agcatgtcct	4500
cctgcacatc	ctcctgctcc	ccatcgccat	cccctatgca	ggttagttcc	cttcttcttc	4560
ttcatttatta	gtatttagtat	ttaactctcc	tgctaacctt	ccctattcct	tttaacaccc	4620
tcttttacc	ctattccag	catcctttct	gaactcagta	tgtgtatag	gtttctaaaaa	4680
gctctcatta	tgctttttt	gacattctt	tttgggttg	tttgaatagc	attaaaaatg	4740
ataattaact	ttccctcaac	tcccctccac	ctccaaccca	agccccgtcc	cacttagcct	4800
aatagttgtg	gattatgaga	tagggaggaa	gtgctaatac	tggctgaact	tggctgcttt	4860
ggacaagttt	aaagctaaag	agagggtctg	gtctgaagag	gcaagagtga	tggcagtc	4920
ggcaggaagt	catccttttc	cagagaacaa	ttttcatga	taatgcacta	ctccacatca	4980

cctagtcaac	atttggagcc	aaattacgac	tttgcacagg	tttcatttt	gaggaggcag	5040
aataaaactct	gagtatttgc	atatcataaa	aatgaaagag	aaagcctctt	tttaaagatc	5100
ttattcttc	tgggtacgga	tgcctgcct	ttgaaactgc	agtgcacgga	gactttgatt	5160
aaagctgcag	aactgcccatt	ctctgtctcc	cactttctcc	cttggatttg	cggtttgggg	5220
aggagttgct	tgaaagttca	tattgcttgg	agatttagag	atctcgtttgc	ctgctctggg	5280
aagtttctct	tgttatcagg	gcaagaggaa	acatctgtat	tttggtttat	cattgttagag	5340
gctgaggtgc	caacgggaga	aggcagtgaa	tatcaagggt	aggcgcaggg	gaataaaaaga	5400
gtgggaacaa	atgcccagat	ggagacatgg	ccttttaca	atataaaaaaa	gagaactggc	5460
tgtatcttt	gagatggtaa	atatgacatt	tatcagacct	ttgatctagt	ttttgatatg	5520
gtacaagggt	taaaaaactc	aagaattttc	taatgcaaa	ggaaaatcat	tcaacccacc	5580
tggttttctt	ttattttgt	aagtggcccg	tttgaaaat	gacactgttt	ggaaagggtc	5640
actctgaaag	catttaggta	agatttctga	agaagtgaaa	aagcagtgag	ttcaaattcaa	5700
gcaggttatac	atgcttgaca	tgtgtcatgt	taaaatcgct	tcacagggtc	gggtgcggtg	5760
gctcacgcct	gtaatcccag	cactttggga	ggccgaggcg	ggcagatcac	gaggtcagga	5820
gattgagacc	atcctagcta	acaaggtgaa	accctgtctc	tactaaaaat	acaaaaaaatt	5880
agccaggcgt	ggtggcaggc	acctgttagtc	ccacctactt	gggaggctga	ggcaggagac	5940
tctcttgaac	ctgggagggtg	ggggttgcag	tgagccgaga	ttgtgtcacc	gcacttcagc	6000
ctggggAACG	gagcaagact	ccatctcaag	aagaagaaga	aaaaaaatgct	tcacagatga	6060
ctgctggttt	aggggatttt	gagcttaaat	tgaaataatg	gctaataattt	tgagggtttt	6120
cattttaaa	gattaaaatg	tcactgttct	taagtagaat	ctggttacct	gaattcatct	6180
gtgctaacgc	aaggggAACG	cagtgtggaa	aacccaaaca	gtagatcaac	cgtaggcagt	6240
gtctatttgt	tttcggcatg	cattatgaac	tttggcagg	agacatacat	ttgttaattat	6300
atttcacttt	gcctaattgt	gaaatgactg	tgtttcctga	gtacaggcag	aatgcagccc	6360
aagagtgcgt	gcaggcaagg	agagtccagt	tggaaattac	aaatatgctg	tgaataattc	6420
ctgaagtgg	taattctaaa	attgtcatca	aaggagggtg	cgccttgcgtt	tagatggcca	6480
gtttgatagt	tttttttaat	aacctttaaa	ataaaaaata	tgggtacct	cttagaacac	6540
acaaagtttg	ttctttttta	aatgacattt	aatattgact	attttagaggt	ttctttgttt	6600
gttactagct	ttgattataa	ttatatttattc	tatgaattt	tattgtatg	tattgtaaaa	6660
taacacattg	ttaggaaaga	agtataact	gtaagttgac	aaccagttat	caacagaata	6720

cactatggag atactttttt aaaagcttaa gaaatattca atataatggg ccccccgcac	6780
ctttgttagga gttagcctat atagaattac cctctattca ctccccaccta catggaaac	6840
aaatatccaa tcctctgtaa taaaagaagc attaaatgag cacctaatac tcaagagtat	6900
gtgggggatg taaagatgaa caaataagaa aggaacttaa atttgttgag caactgatat	6960
gaaccaagta gtaaagtaca tctcacttaa ttcttaataag	7000

<210> 123  
<211> 26  
<212> PRT  
<213> Artificial

<220>  
<223> zinc finger consensus

<220>  
<221> MISC\_FEATURE  
<222> (2)..(2)  
<223> any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (3)..(6)  
<223> any amino acid, some may be missing

<220>  
<221> MISC\_FEATURE  
<222> (8)..(8)  
<223> any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (9)..(9)  
<223> any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (10)..(10)  
<223> any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (11)..(11)  
<223> any amino acid, often aromatic

<220>  
<221> MISC\_FEATURE  
<222> (12)..(12)  
<223> any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (13)..(13)  
<223> any amino acid

```

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> any amino acid

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> any amino acid

<220>
<221> MISC_FEATURE
<222> (16)..(16)
<223> any amino acid

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> any amino acid, often hydrophobic

<220>
<221> MISC_FEATURE
<222> (18)..(18)
<223> any amino acid

<220>
<221> MISC_FEATURE
<222> (19)..(19)
<223> any amino acid

<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> any amino acid

<220>
<221> MISC_FEATURE
<222> (22)..(22)
<223> any amino acid

<220>
<221> MISC_FEATURE
<222> (23)..(25)
<223> any amino acid, some may be missing

<400> 123

Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa His
20 25

<210> 124
<211> 26
<212> PRT
<213> Artificial

```

```
<220>
<223> RDER Motif for a zinc finger domain

<220>
<221> misc_feature
<222> (2)..(2)
<223> any amino acid

<220>
<221> misc_feature
<222> (3)..(6)
<223> any amino acid, some may be missing

<220>
<221> misc_feature
<222> (8)..(10)
<223> any amino acid

<220>
<221> misc_feature
<222> (11)..(11)
<223> any amino acid, frequently aromatic

<220>
<221> misc_feature
<222> (12)..(12)
<223> any amino acid

<220>
<221> misc_feature
<222> (14)..(14)
<223> any amino acid

<220>
<221> misc_feature
<222> (17)..(17)
<223> any amino acid, typically hydrophobic

<220>
<221> misc_feature
<222> (18)..(18)
<223> any amino acid

<220>
<221> misc_feature
<222> (21)..(21)
<223> any amino acid

<220>
<221> misc_feature
<222> (22)..(22)
<223> any amino acid

<220>
<221> misc_feature
<222> (23)..(25)
<223> any amino acid, some may be missing

<400> 124
```

Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Glu  
1 5 10 15

Xaa Xaa Arg His Xaa Xaa Xaa Xaa His  
20 25

<210> 125  
<211> 6  
<212> PRT  
<213> Artificial

<220>  
<223> exemplary linker consensus

<220>  
<221> misc\_feature  
<222> (3)..(3)  
<223> Glu or Gln

<220>  
<221> misc\_feature  
<222> (4)..(4)  
<223> Arg or Lys

<220>  
<221> misc\_feature  
<222> (6)..(6)  
<223> Tyr or Phe

<400> 125

Thr Gly Xaa Xaa Pro Xaa  
1 5

<210> 126  
<211> 30  
<212> PRT  
<213> Artificial

<220>  
<223> Exemplary N-terminal sequences

<400> 126

Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys  
1 5 10 15

Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro  
20 25 30

<210> 127  
<211> 30  
<212> DNA  
<213> Artificial

```

<220>
<223> primer sequence

<400> 127
cggggtaccc cctcccagtc actgactaac 30

<210> 128
<211> 30
<212> DNA
<213> Artificial

<220>
<223> primer sequence

<400> 128
ccgctcgagt ccggcggtca cccccaaaag 30

<210> 129
<211> 89
<212> PRT
<213> Homo sapiens

<400> 129

Glu Arg Pro Tyr Ala Cys Pro Val Glu Ser Cys Asp Arg Arg Phe Ser
1 5 10 15

Arg Ser Asp Glu Leu Thr Arg His Ile Arg Ile His Thr Gly Gln Lys
20 25 30

Pro Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Arg Ser Asp His
35 40 45

Leu Thr Thr His Ile Arg Thr His Thr Gly Glu Lys Pro Phe Ala Cys
50 55 60

Asp Ile Cys Gly Arg Lys Phe Ala Arg Ser Asp Glu Arg Lys Arg His
65 70 75 80

Thr Lys Ile His Leu Arg Gln Lys Asp
85

```